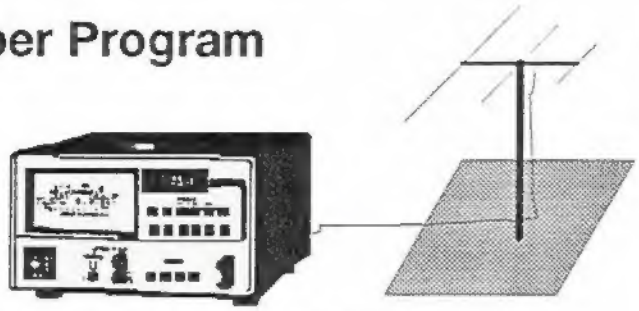
ORANGE COUNTY AMATEUR RADIO CLUB

VOL. XXXI NO. 9 P.O. BOX 3454, TUSTIN, CA 92681 SEPTEMBER, 1990

Our September Program



"ELECTROMAGNETIC RADIATION HAZARDS"

The next O.C.A.R.C. Club meeting, September 21, will be a topic that has been appearing in the news quite a bit recently.

CAN SEEMINGLY HARMLESS RADIATION CAUSE HEALTH PROBLEMS??

If you are skeptical that living under high-voltage power lines can affect your health, I invite you to see this program. It may change your thinking. The program will be presented on a VCR tape that is hosted and narrated by Dr. WAYNE OVERBECK / N6NB and features a presentation by Dr. ROSS ADEY / K6UI of Loma Linda University. The VCR tape is produced and directed by DAVE GUTIERREZ / WA6PMX.

The Prez Sez.....

by Chris Breller, KJ6ZH

If you didn't get to the Southwestern Division ARRL convention, you missed a good time. The forums were very informative and about all of the ham radio manufacturers were represented. I saw where one company has come out with a dual band 2 m/440 amplifier for dual band handie talkies. I was impressed to say the least. Over the last few months, the Club has considerably grown in membership. Welcome to our new members and I hope you are enjoying the Club meetings and activities. With new members come new ideas and interests. Please share these with the Club officers and if possible share some time when asked. Ham radio is about communicating so at the next meeting, take some time to communicate with someone you haven't met yet. We are a friendly club and members are not allowed to bite! Reminder: Contact Bob - KD6XO, if you are interested in working the Fall Classic Carriage event. I had a good time working it last year and will be there this year. If you need a handie talkie to participate, I have a spare or two I can lend. Well that's about all from here in Bellflower.

....73's de CHRIS BRELLER / KJ6ZH

The Annual Auction is Coming Soon!

Friday, October 19th - See Rules on page 9

Have you cleaned out your shack to make room for what you're going to buy???

Minutes of August Club Meeting - 8/17/90

by Bob Tegel, KD6XO

Meeting was called to order at 7:30 PM by President Chris-KJ6ZH. Board members Bob-AF6C and Mark-KJ6JC were absent. There were 49 members and guests present. PROGRAM: Will Anderson-AA6DD gave a very fine presentation on DIGITAL SIGNAL PROCESSING (DSP).

TREASURERS REPORT: absent.

CORRESPONDENCE: subscription sent in for World Radio.

TVI: none.

OLD BUSINESS: none.

NEW BUSINESS:

XMAS PARTY - The Black Angus restaurant in Garden Grove has been selected as the site of the O.C.A.R.C. that will be held on Sunday, Dec 9. The restaurant is located at Euclid and Garden Grove Blvd. The event is planned to begin at 6:00 pm. The price of $15.50 per person includes a choice of Prime Rib, Chicken, Salmon or catch of the day.

AUCTION - The Auction rules will be published next month (Sept)

BULLETIN - Alex read ARRL bulletin concerning 220 Mhz.

VISITORS: Will AA6DD, Hazel Etter, Dick WD6X, Earl K6WS, Harry N6VFS, Mike KC6COT, Sheryl KC6IBN, Al W6IBR, Dot W6IBP, Derek Lassen, John K0KWB, Stan KC6IQK, Larry Body, Mary KB6YEL, Gary WZ0G, Julie KC6HRN, Rich WD6ESZ

ANNOUNCEMENTS:

- Lloyd-WB6ULU announced he was the person to contact for upgrading your license.

- Bob-KD6XO put in a request for more radio operators at his annual Carriage Driving Event in Palos Verdes on Sunday, September 30. Contact Bob for more details at (714) 531 0926. Meeting adjourned 9:27 pm.

Respectfully submitted Bob-KD6XO.

Next Meeting:
Friday
September 21, 1990
7:30 PM

1990 CLUB BOARD of DIRECTORS

President	Chris Breller	KJ6ZH .. (213)	866-2077
Vice President	Ken Konechy	W6HHC	541-6249
Secretary	Bob Tegel	KD6XO	531-0926
Treasurer	Bob Eckweiler	AF6C	639-5074
Activities	John Meacham	KJ6TK	842-4702
Membership	Tom Thomas	WA6PFA	771-2917
Public Relations	Mark Stanford	KJ6JC	991-7398
T.V.I. Chairman	Bud Barkhurst	WA6VPP	774-6361
Member at Large	Frank Smith	WA6VKZ	
Member at Large	John Roberts	WA6LAB	540-7368

CLUB APPOINTMENTS

Club Historian	Bob Evans	WB6IXN	543-9111
W6ZE Trustee	Bob Eckweiler	AF6C	639-5074
RF Editor	Nancy Bucher	N6XQR	537-8728
Refreshments	Jane Breller	n0ne (213)	866-2077
Teen Representative	<open>		

Minutes of OCARC Board Meeting - 9/1/90

by Ken Konechy, W6HHC (Acting Secretary)

The Club Board Meeting was held on Sept 1, 1990 at 9:00 AM at Denny's Restaurant in Tustin. Officers present were Chris-KJ6ZH, Ken-W6HHC, Bob-AF6C, Elmer-WA6PFA, Bud-WA6VPP, and Frank-WA6VKZ. There were a total of 24 members and guests present.

* Ken-W6HHC and Chris-KJ6ZH agreed to be the auctioneers at the upcoming OCARC Auction on October 19th. Bob-AF6C, Frank-WA6VKZ, and Bud-WA6VPP agreed to handle the monies during the action.

* Frank-WA6VKZ agreed to work on a single-page (2-sided) flyer that would be suitable for placing at HRO or radio classes. The flyer would include a brief description and history of the O.C.A.R.C., explain where we meet, how much are dues, and who to contact for additional information. Chris would contact Bob Evans-WA6IXN to see if he would contribute.

* Phil-N6UJD suggested that a questionnaire be prepared that would be used to create an "ELMER PROGRAM" list within the O.C.A.R.C. The questionnaire would ask each member to describe:

WHAT YOU ALREADY KNOW?
WHAT YOU WANT TO KNOW MORE ABOUT?

This information could then be compiled into a matrix showing the interest and knowledge of members within the club.

* Bob-AF6C suggested that the OCARC should plan to have a picnic in the near future. Further discussion was to plan a POTLUCK PICNIC for OCTOBER, perhaps 10/28 (Halloween??). CRAIG PARK in Brea and PENDLETON BEACH near San Onofre were suggested as possible locations. Further discussions at the next Club Meeting.

* Bob-KI6UL suggested that with the large numbers of check-ins on the OCARC 2 MTR net, the club might move the starting time of the 2 MTR net to 8 PM? This might interfere with the currently small 15 MTR SSB net. Chris-KJ6ZH decided to discuss this matter further at the full club meeting in Sept.

On the Nets - August, 1990

by Bob Evans, WB6IXN

8/1 2m phone net- W6ZE /IXN checks in BPX,ZH,NG7D,JSV (wid EZS on side), RE, YZG, PFA, DLA, VMS, KK6NK, VDP, VFC, XQR, KAA, WD6X, YLQ, HBZ, COT, & XSJ! BPX watches the cornstalks dry up as he plants more garlic. ZH announces Sat. breakfast at 8:00 am. at Denny's, 17th St. & 55 Fwy, SA, wid 'Chat-in' on the 146.895 machine. RE plays 'Newsline' tapes & tells OPs abt ARRL last ditch efforts to save 220 MHz., & NL tapes tell us that OSCAR 13 may fall frm orbit in early '97! NG7D has been waiting 3 days fer UPS to deliver a rig frm Orange, CA! . .John consoles himself by working Chile on 10m! YZG's dog, Mac, brings the QTH to life as 'UFOs' fall on the roof. .& JSV fights 'the Spurge' as he decides what to do abt the dying ivy. KAA comes to the rescue wid more ivy fer Jim as PFA urges 'kleen-up' fer the spurge! Jim also tells OPs abt the YLRL net on 145.4 dwn 600 fer the YLs. DLA & fam. are at the QTH as Bruce prepares to go on vacation. VMS now owns an old 'Johnson Matchbox' ant. tuner, & Bill joins IXN as we both work at painting the QTHs. Bill also works DX to N. Ire., Palmyra, AA6LF/KH5(21.295,14.195), Gross Isle(COGOI), etc. Hpe to see Bill & XYL, N6YDQ, at meeting! VDP has had a cold since last Sun, & he & IXN both fight 'nut grass' in the lawns. Hooray!..XQR hears Newsline! ..as Nancy spends 'mucho dolares' last week. . a new car & a new ICOM 761 ! Nancy also has an invasion of 'Tennessee Valley Indians' ! Will XQR successfully transmit CW on cable TV? . . Tune in later! Another NARSman, Dick, WD6X, joins us..& IXN & Dick talk abt past history. Dick tells OPs that N6ZY, Dick Key, passed away, also Bob Landgrave, WA6WZQ. YLQ,Jim, lives near WD6X's QTH in Costa Mesa, & HBZ, Peter, what did we talk abt. .no notes ! And Mike, COT, jumps in to say 'Hi' to the group. 'Guten nacht', Rolf ! (hpe that's correct!) . .XSJ works A3SUN,A3SAU, & VP5GBS(Gene, Caicos Is.) on 10m.

8/8 2m phone net- W6ZE/IXN checks in BPX, ZH, TOC, KAA, JSV, HHC, PFA, VFC, RE, UL, VDP, XQR, BEN, NG7D, VMS, WS, XSJ, VPP, & DLA. With the tomatoes & ocra gone, BPX concentrates on painting the porch. RE helps wid the Red Cross KLOS Blood Drive..over 1000 units collected! A plugged sink & a plumber later, Alex airs the Newsline tapes. ZH discusses a new Club roster as the torn-up kitchen forces n0ne to retreat to the living room! 'Dew drops frm heaven' fell on KAA near Monrovia last week, & JSV removes his 'fungused ivy' in favor of Cherry Apple plant. JSV & EZS simultaneously experience leaks in their 'transmission oil pans' . .Hi-Hi! AND JIM FINDS THE CLUB BADGES ! ! PFA reconfigures the computer & solves his 'no packet' problem..Now Tom tries to get the color & B & W monitors working together! UL plays wid a digital voice recorder kit. And, XQR puts 'RF' together while WD6X restores her fallen dipole ! VDP survives the heat & goes to San Diego yesterday..He`s handling a deceased ham's estate. Larry tells OPs the Ontario Swap Meet is a gud one! UPS loses NG7D's QRP rig in the mail, they finally return it to the sender who will hand deliver it to John (heaven help 220!) VMS finishes the patio cover in time to DX on 20 CW.. he works Dan,QL1US in Sierra Leone;ED9ICM,Melilla,N. Afr., a German OP,6W6/DL7FT in Sinegal! SXJ enjoys the Club breakfast, fills the fishpond in the heat, & DXs on 10m..a WH4, Midway, a VP5,EA8-Canary Is, a V2 in Antigua, & a DJ9 in the Bahamas! VPP picks up his 'Mickey Mouse' QSL from the Disneyland special events station, bet. trips back & forth to visit the XYL in the hosp. DLA & fam. pack fer a trip up the coast. .And Bruce & the pack(XQR, VMS & XYL, XSJ,etc) all want Club badges! Mike, COT, tail-ends the net as he hosts his parents frm NJ.

8/9 15m CW net- W6ZE/IXN checks in VDP. Larry will give NG7D a landline to share QRP interests wid him. IXN enjoyed the code practice!

8/15 15m phone net- W6HHC/ANC checks in AF6C,XQR,VMS,UJD, & YZG. UJD will test fer Advanced ticket on Sat. .gud luck, Phil! OPs listen attentively as VMS relates DX adventures!

8/15 2m phone net- W6ZE/IXN checks in NG7D, RE, SDU, VMS, NK, HHC, YZG, VFC, ZH, COU, XQR, AF6C, VDP, XO, WS, & PFA. RE nurses a sore toe on his right foot, airs Newsline tapes..special service satellites will look at hams freqs. for broadcast space at upcoming WARC meeting (especially 2m & 220 MHz). RE & PFA announce need fer OPs to work emerg. communications fer the Yosemite fire. NG7D misses the QRP contest last Sun as he tries to get the Argonaut 509 on the air, & John will host Larry, VDP, at the QTH as they tackle a filter analysis on John's Ten-Tec. SDU joins retired OPS, &, he relates his electronics duties wid the Navy during WWII ! And Foster asks HHC fer QSL info on 3D2DM & 3D2AM on Conway Reef. HHC responds wid: YASME Foundation,Bx 2025, Castro Valley, CA. 94546. VMS & IXN are still busy painting QTHs, & Bill DXs C56/DL7FT in Gambia. YZG's '2 canines' are presently quiet as IXN tells Lu abt 'old pilots' on 145.46. ZH & n0ne lay tile in the kitchen & bathroom as Chris tries to keep tile glue off the rig! COU will enjoy swapping packet details wid AF6C,HHC,PFA,XO,XQR,ZH & other 'packeteers' ! XQR discovers that her

On the Nets - August, 1990 (Continued)

by Bob Evans, WB6IXN

QRN computer is a noise generator, & OPs pas along TNX to Nancy, UL,HHC,AF6C,PFA, etc., fer this month vy professional 'RF' !! XO joins us after a Carriage event meeting at Palos Verdes. .Bob's harmonics will try to run the ranch after the caretaker passed away! And, XO needs volunteer OPs fer the Carriage event this Fall. K6WS says 'Hi' to all, & Mike, COT, is the instruments technician that IXN cudn't remember!

8/16 15m CW net- W6ZE,IXN checks in NG7D. John transmits 9V instead of 12 ! LXN gives him a 599C ! John increases the voltage & his sigs are 599 ! Then IXN's rig acts up. .we end up on landline !

8/22 15m phone net- IXN hears ULU try to copy a YL way dwn in the mud !

8/22 2m phone net- W6ZE/IXN checks in UJD, BPX,RE,ZH,JSV,ZAU,PFA,VMS,NG7D,VPP,XQR,VDP,COU,KAA,COT,AMZ,& XSJ. Congrats, Phil, on the upgrade: UJD/temp AA! BPX is'floored' by the 20 lbs. of garlic he just planted, but Blanche cures all wid a soothing rubdown! RE airs 'Newsline' tapes, tells OPs that VECs hve info on code-free license fer the handicapped, & informs all that 3rd party traffic wid New Zealand is not approved! ZH & n0ne are preparing fer the Convention, along wid IBP & IBR. JSV & EZS experience 'compound potty problems' as the toilet seal & water valve leak simultaneously! N6ZAU is a CATSCAN repairman, & he practices his skills on his autos ! PFA gets all 3 computers talking to each other & unleashes them on his packet programs. VMS DXes agn as he capitalizes on a 313-35-3 solar index: 7Q7CW,20m CW, Malawi;FH8CB,Mayotte Is;Angelo,D44BS,Cape Verde;VK9NX,14.025 CW,Norfolk Is; & CEOFFD(225 countries, 192 confirmed!). NG7D com- pletes rejuvenation of his Argonaut Ten-Tec as his electronic keyer goes 'kaput' ! Condolences to Bud,VPP, on the loss of his XYL! Bud still learns the intricate details of his TRS-80 Mod IV computer! XQR tells ZAU abt KC6JVG, Bob, who is totally blind, & Nancy reminds all OPs that 'RF' has room fer their articles! VDP finishes NG7D's copy of the Ten-Tec manule, & Larry will be investigating the 2 new Ten-Tec rigs. KAA notifies OPs that 'RF Concepts Power Amps.' have no remote plug in the back! COT & IBN prepare fer the 'Insomniac Net' on 144.33. XSJ is interested in the Ten-Tec line, & Rolf will be 'conventioning' also. Rolf & Larry enjoyd the 'meeting after the meeting' at Fiddler's Three!

8/29 2 m phone net - W6ZE/IXN checks in BPX, WA6GZO, RE, JSV, NG7D, VPP, KAA ,XQR, VMS, VDP, XSJ, ZH, UJD, SDU, ZAU, PFA, & YZG . New garbage regs. may limit BPX's garden next year..NO CORN! Jim, GZO, is looking fer help wid the Westminster Festival over the Labor Day weekend, & RE wins an ARRL Handbook at the Convention in San Diego! Alex airs the 'Newsline' tapes, & OPs can listen to military build-up info. in the Middle East on 11.176 MHz, & 'lies frm Baghdad' on 13.660 MHz. EZS's master cylinder 'pops', & Jeanie loses her brakes; the Tiffany lamp gets broken; and the answering machine says 'no' to incoming calls ! . .Did I miss anything, JSV? ! Jim also tells us that N6KTN, Tae Shin, may visit wid us next meeting! NG7D wrks YZG wid 2.5 W on 15 wid low Z mike thru an audio amplifier stage ! John learned another definition fer 'twisted pair' ! KAA left the Convention too soon & left behind a prize of a dual-band rig! (sounds like IXN's luck!) XQR receives 'veg-iis' frm parents' garden in Ohio. .visions of gourmet salads sweep past Nancy's eyes ! ZH reminds all OPc abt the Club breakfast, & breaks the news to KAA abt his 'dual-band loss' ! VMS DXes agn! . . . V85SS in Brunei, 8RlRBF in Guiana,YV0RV on Abe's Is .,CU2AK in the Azores,YN/SM0OIG(2OCW) in Nicaragua-, & T32BU on Christmas Is. VDP conventions & listens to Wayne Overbeck's antenna talk. And XSJ talks to Madrid, Spain; Johnson Is.; Vermont; & a JA3, & enjoys boat riding, dinner & dancing at the Convention! SDU weathers a typhoon in Taiwan (17 people killed!) Foster enjoys a mountain town, & especially 'Snake St.' in Taipei! ! ZAU tells NG7D abt a 5 dollar Hi-Z Mike at Orvac, in Fullerton, &, Mike will attend his 1st Red Cross class next month. PFA's kitchen floor mysteriously warms up last Sun. eve. ! . .broken hot water line under the floor; & Tom gets a nice QSL card frm XV2A, Ho Chi Minh City, Vietnam Socialist Republic! . .& PFA says we may hve another visitor at Club meeting. .WA6X, Bob Hammer.

8/30 15m CW net - W6ZE/IXN checks in NG7D/QRP. ZAU will check on a Hi-Z mike fer John over at Orvac.

The 2-meter net is lasting pretty late. There will be a discussion at the September meeting about possibly changing the time. Bring your opinion and let it be known!

Antenna Tuners Exposed

by Bob Eckweiler, AF6C

A Bit of Observation: After years of obscurity, the "antenna tuner" is again becoming a popular item in the ham shack. In its new popular role, calling it an "antenna tuner" is not correct. Instead, let's call it a "transmatch", short for "transmitter matching network". A word coined, I believe, by Lew McCoy of Ham Radio Magazine (rip).

A Bit of Matching History: The use of matching networks became popular in the early years of ham radio when non-resonant antennas were in common use. Coaxial cable was not available, and the matching network was connected directly to the antenna. In those days the antenna tuner did tune the antenna. By the fifties technology had changed. Coaxial cable was readily available, as were rugged transmitting tubes. Transmitters had pi-network output circuits, and resonant antennas had become popular. Transmitters generally had little trouble loading directly into the antenna even at higher SWR ranges up to 3.5:1. Antenna tuner use was uncommon unless the station was using exotic wire antennas.

When solid state rigs came on the market, the pi-network output circuit was replaced by a broadband output network. No longer was it necessary to retune the transmitter's output stage each time you changed frequency more than a few KHz. This made operating more convenient, but the new broadband circuit was much more sensitive to mismatch than the pi-network circuit. An SWR greater than 2:1 could not be tolerated by many rigs and the result often was expensive destruction of the output transistor(s).

Quickly, manufacturers took action. Protection circuits were incorporated in rigs to reduce output when the mismatch was excessive. This power reduction saved the final transistor(s), but the drop in power was poorly tolerated by hams. Today, even though manufacturers are improving matching capability, it is common to see a matching network installed between a solid-state transceiver and the coax leading up to the antenna. The network, when properly adjusted, matches the high SWR to an impedance the rig is happy with, and the rig puts out full power.

However, there is some cost to using a transmatch between the rig and the antenna feed line. The advantage of the broadband circuit is lost. A transmatch must be tuned, can be expensive, and introduces additional losses. The transmatch can also mask problems with the feed line and antenna that are hurting performance. Finally, when used improperly, damage to the antenna and feed line can occur.

A Bit of Matching Theory: Today, 50 ohm impedance coax is in common use by hams. For the purposes of this discussion assume it is being used. Many resonant antennas are in use by hams. Beams, quads, dipoles, inverted vees, and verticals are typical resonant antennas. Many of these antennas, either by use of traps or by natural design, are resonant on more than one band. Every antenna, broken or not, bedsprings or window screen, connected to a feed line has an impedance for every frequency. The impedance has two components, resistance and reactance. The resistive component lies between zero and infinite ohms. The reactive component lies between minus infinite and plus infinite ohms. When the reactive component is negative it is capacitive, and when it is positive it is inductive. A frequency where the reactive component is zero, crossing between inductive and capacitive, is called a resonant frequency. At a resonant frequency the reactive component is zero and only the resistive component exists. The antenna looks like a resistor of whatever value the resistive component is at resonance.

By proper design of an antenna a resistance near 50 ohms at resonance can be achieved. Often a fixed matching network is used at the antenna feed point. Beta and Gamma matches are common types. If at resonance the antenna exhibits a resistance other than 50 ohms, then a 1:1 SWR match is not possible. Say the resistance is 60 ohms; then the SWR at resonance will be 1.2:1.

What happens as the frequency changes? As the frequency moves away from resonance the resistive component changes and the reactive component becomes inductive or capacitive. This causes the SWR to change also. Since the antenna impedance is equal to the vector sum of the two components, the SWR will begin to rise after some frequency deviation. The antenna's bandwidth is the area where the SWR is below some arbitrary value. This value varies between antenna manufacturers, but a more important value to the ham is the SWR that his rig can handle.

A Bit of Feed Line Theory: The feed line plays an important part in the overall picture. If the antenna is the ideal 50 ohms resistive, then the transmitter will see 50 ohms at the other end of the feed line, independent of feed line length. If, however, the antenna is 100 ohms resistive (an SWR of 2:1), then the impedance at the other end of the feed line (neglecting losses) will be transformed depending upon the electrical length of the feed line. If the feed line length is an even multiple number of quarter-wavelengths long, then the impedance will appear the same as at the antenna. If the feed line length is an odd multiple of number of quarter-wavelengths, then the impedance will appear as 25 ohms to the transmitter (SWR still 2:1). Between multiples of a quarter and half wavelength the resistive component varies between 100 and 25 ohms and the reactive component varies between about 38 ohms capacitive and 38 ohms reactive.

Feed lines also introduce losses between the transmitter and antenna. At higher frequencies this can be substantial. Losses and SWR affect each other. When you measure the SWR at the transmitter and again at the antenna, the SWR at the antenna will read higher. This is most noticeable on the higher frequency bands where the feed line losses are greatest. The reason is simple. SWR is a measure of the power moving towards the antenna versus the power being reflected back to the transmitter. At the transmitter end of the feed line you're measuring full transmitter power versus the reflected power after traveling twice the length of the feed line (up to the antenna and back). At the antenna you're measuring the power entering the antenna versus

Please see TUNER, page 6

AF6C

Tuner

Continued from page 5

the power being reflected back; a truer indication of the real SWR due to the antenna. Before you climb your tower to measure the true SWR, realize that what you're reading in the shack is the SWR that the transmitter sees. Feed line losses cause lower SWR readings at the transmitter. A high SWR also creates more losses in the feed line. In a properly matched feed line the peak voltage and the peak current are constant along the line. When there is a mismatch, the current and voltage peaks along the feed line. If the match is large, these peaks become high and can damage the feed line and antenna. The higher currents cause coax heating and loss of transmitted power; perhaps the loss of a DX contact too.

Putting Together the Bits: Looking at the whole picture, the transmatch between transmitter and the feed line to the antenna can help. Many antennas can be set during assembly to favor the phone or CW part of a band. If you've set the beam to phone, and your rig balks at the SWR on the CW portion, use the transmatch. Remember, though, that the SWR on the feed line has not been changed by the transmatch. It still has the same SWR losses as you'd get without the transmatch. Also the antenna has not been "tuned". It still will reflect the same energy back towards the transmatch. All you are doing is making the transmitter see the 50 ohm load it desires. Be sure your transmatch has a bypass switch, or add a separate switch so you can bypass the transmatch when it is not needed. This should be most of the time.

If your antenna won't load up at all on a band it was designed for, then look for trouble in the feed line or antenna. Don't use a transmatch to load a resonant antenna on a band it wasn't designed for. The high SWR currents and voltages can damage your antenna traps, insulators, feed line, and even the transmatch. Chances are you will get poor results even if no damage occurs. Finally, don't call it an "antenna tuner" unless it's right at the antenna!

de Bob, AF6C

Intermediate DXing

by Bill Freyfogle, N6VMS

OK, now you're on the way working DX and closing in towards DXCC. Should make it soon. These hints will take you beyond 200 countries confirmed. The first step is to wander beyond 10 meters to the DX-rich bands of 15 and especially 20 meters. To do so, of course, requires upgrading beyond Technician to Advanced. Why not General? Because most DX in the phone band is found in the Advanced parts of the band (14.175 - 14.225 and 21.225 - 21.300). So, get a tri-band beam and put it as high as possible. If you're working SSB, check out the DX Nets. Sitting in on nets will take you to 200 countries, no problem. Having a beam will get you past about half the pileups out there.

Want to go to 250 countries? Big decision time: get an amplifier or learn the code! An amplifier will help bust SSB pileups and make contacts when the DX station could not hear you before. Learning the code (25 wpm), however, accomplishes two things - it opens up an entire new level of DX and almost triples your signal without an amplifier. Many DX stations are not proficient with English, others have only a dipole and 100 watts but wish to work the world. Both types of DX are found in the bottom of the CW bands. Also, many DX-peditions are found only on CW, usually in the Extra Class portions.

Another skill essential to good DXing is at least a working knowledge of propagation. Knowing when and where the bands will open up, when to forget about DXing and take care of daily chores, freeing up time when the bands are open. As a general rule, be on 20 meters long path (@220 degrees) early in the morning, 15 meters late morning / late afternoon, 10 meters mid-afternoon, then back to 15, then 20 meters short path in the evening. Try 40 meters CW late night. Conditions vary widely, so learn to adapt. Try to be on the maximum usable frequency.

Smooth operating skills are refined at this point - learn when to tail end, when to change frequency, learning a DX station's listening pattern, how to work a pileup, and when to give up and look elsewhere on the bands. This comes with practice and constant self-evaluation.

Getting to 250 countries requires advance knowledge of DX-peditions to the rare and semi-rare countries. It also requires you to start stalking some of the semi-rare ones: learning their operating habits and being at the right place at the right time. This information is obtained from DX publications such as The DX Bulletin, The Long Island DX Letter, and QRZ DX.

One of the best weapons in a DX hunter's arsenal is the DX Packet Cluster. Operating on 145.68 MHz, this links some 200 DXers in the L.A. area to each other showing instant "DX alerts" and archival history on DX operating habits. It also has the W6GO QSL manager list for QSL routes.

Xtra Quiet Radio

by Nancy Bucher, N6XQR

What a pleasure it is to put together this, my second issue of the *RF*! So much generous help... Ken, W6HHC, and Bob, A Funny 6 Call (can't resist your phoenetics) have collected and modemed and scanned and written and delivered articles. Jim, N6XTJ, has caught articles from packet and forwarded them on to me. And, of course, as you look through the newsletter you can see how many people have written articles! And such interesting ones at that.

And, WOW!, how many more articles have been promised for future months. Bob, WB6IXN, has made my spell checker obsolete, but he is giving me lots of historical information for future issues.

In the near future there will be a survey of all members to determine who has expertise in what areas so that when someone wants some help learning a new area they will know who to turn to. Be sure to respond to the survey and we will publish the results here. Your continued support is much appreciated. Tnx. and 73s de N6XQR

Try This One

by "Tom" Elmer Thomas, WA6PFA

No doubt you have wondered what the OM, XYL or YL and the shack on the other end of your QSO looked like. Have you been at a loss for words during a QSO with an unfamiliar ham? It has been said that a picture is worth a thousand words. Dream no more. Fast Scan Amateur Television (FSATV OR ATV) is as close as the telephone and your plastic money card and it won't take a big bite out of it either. If you have a video camera or camcorder you have probably made the biggest purchase already.

Before we get serious about purchasing an ATV station; let's learn more about this fast growing mode of amateur communication. On ATV you will see the OM, XYL, YL, the family, the family pets, neighbors and friends that drop by. You will see computer graphics and games and unique station ID displays. Most present day ATV is in color.

There are several ATV repeaters in the Southern Calif. area. They repeat both picture and sound of the station transmitting on their input frequency. A repeater located on Santiago Peak, the WA6SVT repeater, can be seen from the San Fernando Valley to San Diego. This repeater is linked to a network of other repeaters in Southern Calif. An independent repeater that is quite active in this area is on Mount Wilson at the Ch. 40 TV site; the K6KMN repeater. The repeaters are open repeaters supported by voluntary yearly contributions from the users.

The popular ATV transmitter in the early 70's, was a converted tube type mobile 70cm business band transmitter. The receiver was a modified UHF TV tuner and the antenna, a Cushcraft DX 420 or a "home brew" as was most of the station. The black & white camera didn't have many frills and was usually a retired surveillance camera. Today there are many more options. You can purchase a complete transceiver from at least three vendors. If you are a builder and enjoy doing your own thing, you can purchase various circuit boards and package them in custom enclosures making up your own station.

The output power of most transceivers and circuit board transmitters is about 1 watt. Power amplifiers are available with 10 to 100 watts output. As in the early days of ATV the picture is viewed on an unmodified TV receiver. The ATV receiver is actually a frequency down converter with the output on an unused TV channel. The repeater receiver is usually a separate unit from the transceiver used for station to station operation. Many ATV'ers monitor the repeater on a separate TV receiver enabling them to see their transmitted picture re-broadcast. This is useful in making camera or transmitter adjustments.

Most of the repeaters are on the 23cm band. The 33cm band has some activity but non-amateur priorities are creating an uncertainty. (See ARRL Repeater manual 1989-1990 page 41) The typical FSATV station has a transmitter capable of transmitting on at least one frequency, preferably two. It consists of a video amplifier, audio amplifier, audio/video modulator, crystal oscillator, frequency multipliers and the final output stage that is AM modulated. (output 1 watt.) The majority of stations use an amplifier with about 10 watts out. The camera can be any of the home video cameras with or without recorders. The antenna is a high gain, beam, vertically polarized with a rotator. The receiver uses a UHF converter whose output has been tuned to the Ch. 3 input of your television receiver.

A repeater receiver station consists of a high gain vertically polarized antenna, a frequency down converter (mast mounted) and a desk top power supply with frequency tuning of the down converter. The output frequency of the converter is Ch. 8 TV. Here are some of the frequencies used in this area for FSATV: 146.43 FM simplex for audio contact. 434.00 MHz for repeater input and simplex ATV. 426.25 MHz for simplex ATV. 1277.25 MHz, Loop Canyon Repeater. 1241.25 MHz, Mt. Wilson Repeater. 1253.25 MHz, the Santiago Peak repeater. The above repeaters are usable in Orange County providing you are not shielded by hills, buildings, or dense foliage.

Hope to SEE you on the air soon. If I can help you get started with this fun mode of hamming let me know.

73's WA6PFA, "TOM" Elmer Thomas

Newport Amateur Radio Society

by Bob Evans, WB6IXN, Club Historian

My first introduction to the 'NARSmen' came when the 'Trekies' & Leroy Sparks, W6SYC, asked me,IXN, to speak on Black Holes, a relatively new subject made popular by Kip Thorne & others at Caltech in the early '70s. The Newport Club formed in the early'50s, composed of hams who worked for Helipot Div. of Beckman Instruments, then located in Newport Beach. About 1957 or '58, Helipot was moved to the Fullerton Beckman installation. The old Helipot building is now occupied by Hughes. Meetings are on the 2nd & 4th Fridays, Parks & Recreation Bldg., Newport Beach. How many of these NARSMEN did you know, or do you know?

W6CPB ..... Bill Weise
WA6VJV ..... Harvey Helling
W6NJJ/NT ..... Ray Davis
W6SYC ..... Leroy Sparks
W6MYC ..... Johnny Rathrock
VE7BPI/N6XSJ Rolf Franzke
WA6TVA/K6JT Steve Phillips
WB6MTX ..... Ray Broyles
WA6LVS/N6LV Jim Henderson
W6CGM ..... Harold Harding
N7AZ ..... BOB CHASE

WB6UHG .... Clair Weidenaar
VE7BYO .... Lloyd Yendall
W6NXX ..... Harry Harber
WA6ISO ..... Larry Walter
WA6BPM .... Rich Hurley
W6WYH ..... Ted Wilson
WA6LAB .... John Roberts
WA6GMV .. John Browning
WB6SW ..... Ben de Piazza
WD6X ..... Dick Hammerschlag
KK6QW ..... ROLF (NOW)

Marty Ronney
Kent Smith
Casey Conway
Jim Gordon
Frank Witte
Al Jenny
Ray Forbes
Len Stafford
Ken Miller
Romeo Brown

WA6HTN ..... Leo
WB6NEF
WB6MUL ..... Bob
K6IL
..... Stu Foote
K6VDP LARRY BEILIN

Much TNX to WD6X, VDP & XSJ for their help!
de Bob, WB6IXN
Club Historian, OCARC

SCDCC Designs a NEW Packet Bandplan for 2 Meters

Copied from the WB6YMH-2 Packet BBS by Bob, AF6C, and edited by Ken Konechy, W6HHC

At a board meeting of the SCDCC (Southern California Digital Communications Council) directors, held on July 28, 1990, the following new 2 Meter packet bandplan was proposed and unanimously approved.

* The intent is to move all long haul trunking off 2 Meters.

* All packet users are encouraged to persue higher frequencies (>2 MTRs) and higher baud rates.

Some frequencies are currently in use, some have yet to be vacated by other services. Packet users should not occupy frequencies until they have been opened for packet use by SCDCC and TASMA.

Frequency	New Use	Current Use
144.91	Keyboard	None
144.93	tcp/ip	None
144.95	DX Clusters	None
144.97	General Use	None
144.99	9600 Baud & Exp	None
145.01	Users	Backbone/General Use
145.03	Keyboard	General Use
145.05	General Use	General Use/Backbone
145.07	General Use	General Use
145.09	General/Keyboard	Keyboard Only
145.61	General	None
145.63	General	None
145.65	General	None
145.67	DX Clusters	None
145.69	General/DX Clusters	None

Other Frequencies

146.745/146.145	Duplex Repeater
145.36/144.76	Duplex Repeater

NOTES:

145.09 to remain keyboard to Keyboard only until one of the new Keyboard frequencies is available.

144.99 for experimental and 9600 baud use.

145.01 Should not be occupied by BBSs.

145.36 MY FAVORITE FREQ FOR THE WB6YMH-2 BBS WILL NO LONGER EXIST.

145.68 CURRENT PACKET CLUSTER FREQ WILL HAVE TO MOVE TO 145.67.

List composed by Julian Macassey, N6ARE Chairman of SCDCC.

73's ....de KEN / W6HHC

Stolen Ham Gear?

Forwarded from Packet by Jim Roberts, N6XTJ

Date: 07 Sep 90 21:21
Message-ID: <6988@KF4TE>
From: KB4BI@KF4TE
To: ALL@USA
Subject: Stolen/Lost Ham Gear
Path: KB6JES!KB6RAA!N8GTC!
W7JHX!KC7CG!W1FJI!
W7LHO!WB8CQV ...

From: KB4BI@KF4TE.VA.USA.NA
To: ALL@USA

I am compiling a national database of stolen or lost Ham gear, to assist in relocating the rightful owner.

Please send submissions, via postcard, QSL or packet, in the following format:

Brand Name
Model number
Serial number
Date stolen/lost
Circumstances
Name/Call of owner
Reported by

If mailing, send to:

KB4BI
6843 Brian Michael Ct.
Springfield, VA 22153

PLEASE PASS AROUND TO OTHER HAMS, OR PUBLISH IN HAM CLUB NEWSLETTERS, THAT THIS DATA BASE IS BEING ESTABLISHED.

POT LUCK PICNIC IS COMING IN OCTOBER! Decisions will be made at Sept. Meeting on date and place.

THE O.C.A.R.C. ANNUAL AUCTION
WILL BE HELD FRIDAY EVENING, OCTOBER 19, 1990
SO MAKE YOUR PLANS TO ATTEND!!
AUCTION RULES & INFORMATION

PROCEDURES:

BUYERS:
- REGISTER
- RECEIVE A BIDDER'S CARD
- SHOW YOUR CARD WHEN YOU HAVE WON A BID

SELLERS:
- REGISTER
- PAY SELLER'S ENTRANCE FEE
- RECEIVE SELLER'S TAGS
- INDICATE/CONFIRM MINIMUM BID FOR EACH ITEM

AUCTION:

ITEMS FOR AUCTION WILL BE OFFERED IN NUMERICAL SEQUENCE BY SELLER'S REGISTRATION NUMBER. UP TO 5 ITEMS OF A SELLER WILL BE OFFERED EACH ROUND.

FEES:

BUYERS: NONE

SELLERS:
- $3.00 ENTRANCE FEE
- 10% OF SELLING PRICE TO OCARC (UP TO MAX OF $8)

MISCELLANEOUS:

- PLEASE BRING ITEMS RELATED TO HAM RADIO & ELECTRONICS (NO CAMPING OR FISHING GEAR....PLEASE)
- PLEASE MARK EACH ITEM OF YOUR GEAR WITH THE MINIMUM BID
- LOWEST MINIMUM BID IS $1.00. IF THE ITEM IS NOT WORTH $1, THEN PLEASE MAKE A "GRAB BAG" OF SEVERAL ITEMS.
- SELLERS WISHING TO DESCRIBE AN ITEM IN DETAIL SHOULD DO SO ON A CARD & TAPE THE CARD TO THE ITEM.

ADDITIONAL INFO: CALL KEN-W6HHC 541-6249

Orange County A.R.C. Welcomes its New Members!!!

Gerry Bailey ..... KC6COU .. Huntington Beach
Larry Body ..... Santa Ana
David Corsiglia ..... WA6TWF Anaheim
Gary Gabrick ..... WZ0G ..... Cypress
Mary Gabrick ..... KB6YEL .. Cypress
Earle Grandison ..... K6WS ..... Fountain Valley
Dick Hammerschlag WD6X ..... Costa Mesa
Dick Higgins ..... Brea
Rusty Kerr ..... Irvine
Dennis McArdle ..... KC6CQD .. Anaheim
Jim Robertson ..... KK6NK .... Costa Mesa
Michael Scanlan .... KC6COT .. Costa Mesa
Sheryl Schulgen ..... KC6IBN .. Costa Mesa
Margaret Speik ..... Balboa Island
Robert Speik ..... Balboa Island
Harry Warner ..... N6VFS ..... Costa Mesa

CLUB FUNCTIONS

MONTHLY MEETING:	3rd Friday of each month, 7:30PM at MERCURY SAVINGS & LOAN
Sep 21st	1095 Irvine Blvd. (4th St. becomes Irvine) Tustin, CA. Talk-in on 146.55 MHz
Oct 19th	
Nov 16th	(Take the 4th St. exit of the 55 Freeway and head east. Continue past Newport Blvd. about two blocks. It's on the left.)
CLUB BREAKFAST:	1st Saturday of each month, 8:00AM at DENNY'S Resturant
Oct 6th	2314 E. Seventeenth Street Santa Ana, CA. (714) 543-0872
Nov 3rd	(Second bldg. west of the 55 Freeway)

CLUB NETS

BAND	MODE	DAY	LOCAL TIME	FREQ MHz	SPLIT	PL	OPERATOR
2 Meters	FM	Wed	2100 hrs.	146.550	smplx	na	WB6IXN
15 Meters	SSB	Wed	2000 hrs.	21.375*	smplx	na	WB6IXN
15 Meters	CW	Thu	2000 hrs.	21.175*	smplx	na	KB6NAX

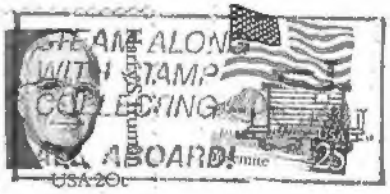
(Listen for W6ZE, net control) *Plus or minus QRM

ARES DISTRICT NETS

2 Meters	FM	Mon	1900 hrs.	146.220	-600	1A	N6HQI 1
2 Meters	FM	Mon	~1915 hrs.	145.340	-600	4Z	K6KAA 2
2 Meters	FM	Mon	1930 hrs.	noted	smplx	na	noted 3

1 - ARES Info net.
2 - ARES District 3 net starts after info net is completed (Usually about 1915 hrs).
3 - City Nets: Orange - 146.535 WB6FCP; Tustin - 146.505 WA6VKZ; Santa Ana - 147.585 W6HHC

ORANGE COUNTY AMATEUR RADIO CLUB, INC.
P.O. BOX 3454
TUSTIN, CA 92681



First Class Mail

Time-Dated Material.
Please Rush!!